

United States Comments

GUIDELINES FOR THE TRANSPORT OF  
FISH BY BOAT

The United States recommends revising the above title to read:

*Guidelines for the Transport of Farmed Fish by  
Boat*

**Preamble:** These guidelines apply to the following farmed species of fish: salmonids and cyprinids. The guidelines may also apply to other *fish* species.

**Comment:** Either the Guidelines do or do not apply to other fish species.

The United States recommends revising the second sentence above to read: *‘The use of ‘fish’ throughout these Guidelines shall refer to farmed species of salmonids and cyprinid fish.’*

Article 1

The length of time *fish* spend on a transport should be as short as possible.

**Comment:** The United States recommends revising the above sentence to read: *‘The length of time farmed fish spend in transport by boat should be as short as possible.’*

As an alternative, the United States recommends including a list of definitions in Article 1. For ease of reference, *‘fish’* as referred to in this chapter would be defined as *‘applicable species of farmed salmonid and cyprinid fish’*. *‘Welfare’*, *‘transport’*, *‘owners/managers’* and other terms used in a technical sense should also be defined in the context of this chapter.

**Note:** For purposes of further commentary, every comment below assumes that the term *‘fish’* as used throughout the proposed Guidelines will be amended more precisely as recommended above.

Article 2

**Responsibilities**

## AAHC March 2006 Report

### United States Comments

The welfare of *fish* during their transport is the joint responsibility of all people involved. These guidelines apply to the transport of *fish* by *boat* within a country and between countries. The roles of each of those responsible are defined below:

**Comment:** The United States recommends revising the section above to read: *'The welfare of farmed fish during their transport is the joint responsibility of all personnel involved. These guidelines apply to the transport of fish within a country and between countries. The roles of each of the various personnel are defined below.'*

In addition, the US recommends that the responsibilities of the personnel listed below should be revised to list the Competent Authority first, as it is the Competent Authority that is responsible for setting overall fish welfare specifications; followed by Owners/Managers; then Private veterinarians and fish health biologists; then Aquatic Animal Technicians; then Transport Companies; then Captains.

Throughout the remainder of the document, references to movement of fish should be standardized as 'transport'.

1. Owners and managers of *fish* are responsible for the general health of the *fish* and their fitness at the start of the transport, and to ensure the overall welfare of *fish* during the transport regardless whether these duties are subcontracted to other parties.
2. *Aquatic animal technicians* handling *fish* prior to loading as well as during loading and unloading have a personal responsibility for their welfare.

**Comment:** The United States recommends specifying what the responsibility(ies) of aquatic animal technicians may be.

3. Transport companies, *boat* owners and captains, in cooperation with the *Competent Authorities*, are responsible for planning the journey to ensure that the transport can be carried out properly according to *fish* welfare standards. These include:

**Comment:** The United States recommends revising the sentence above to read: *'Transport companies, boat owners and Captains, in cooperation with the Competent Authorities, are responsible for planning the transport to ensure that it can be carried out properly according to the specifications of this chapter, including:'*

- a) responsibility for choosing an appropriate and functioning *boat* and ensuring that competent staff are available for loading and unloading;
- b) responsibility for developing and keeping up to date contingency plans to address emergencies and minimise stress during transport;
- c) responsibility for correct loading of the *boat* with the *fish*, for regular inspections of

United States Comments

the *fish* during the journey and for appropriate responses to problems arising.

**Comment:** The United States recommends revising the sentence above to read:

*‘responsibility for correct loading of the boat with the fish; for regular inspections of the fish during the transport; and for appropriate responses to problems arising during transport.’*

4. Captains should be properly trained in transport regulations, and the correct *boat* and equipment usage to ensure that *fish* welfare standards are applied. The captain should also be aware of the latest *aquatic animal* health situation in the zones through which the journey will be made to allow correct journey planning and adjustments as necessary. The captain is responsible for all documentation relevant to the journey, including a journey log.

**Comment:** The United States recommends revising the section above to read: *‘Captains should be properly trained in transport regulations, and the correct boat and equipment usage, to ensure that appropriate welfare oversight is applied. The captain should also be aware of the latest aquatic animal health situation or transport requirements in the zone(s) through which the transport will be made to allow correct planning contingencies, and make adjustments as necessary. The Captain is responsible for all documentation relevant to the transport process.’*

5. Managers of facilities at the start and at the end of the journey are responsible for:
  - a) providing suitable facilities and equipment for loading and unloading to ensure that *fish* welfare standards are applied;

**Comment:** The United States recommends revising the section above to read:

*‘providing suitable equipment for loading and unloading fish, and ensuring welfare oversight relevant to these processes.’*

- b) providing *aquatic animal technicians* to load and unload the *fish* in a manner that causes minimum stress and injury;
  - c) minimising the opportunities for disease transmission while the *fish* are in the facilities;
  - d) providing facilities and agents for washing and disinfecting *vehicles* after unloading;
  - e) providing facilities and veterinarians, fish health biologists or other competent

United States Comments

persons be enable *killing* of the *fish* humanely if required.

**Comment:** The United States recommends revising the above sentence to read:  
*‘providing facilities and veterinarians, fish health biologists, or other competent persons to enable killing of the fish humanely if required.’*

6. The responsibilities of the *Competent Authorities* include:
- a) establishing minimum standards for *fish* welfare, including requirements for the inspection of *fish* before, during and after their travel, and appropriate certification and record keeping;

**Comment:** The United States recommends revising the section above to read:  
*‘establishing minimum standards for fish welfare, including requirements for the inspection by appropriate aquatic animal health personnel of fish before, during and after their travel, and appropriate certification and record keeping requirements;’*

- b) approving *vessels* for the transport of *fish*;
  - c) ensuring appropriate awareness and training;
  - d) setting licensing standards for captains, *aquatic animal technicians* and managers;
  - e) implementation of the standards, including through accreditation of / interaction with other organisations;
  - f) providing the latest animal health information and designated restriction zones;
  - g) monitoring and evaluating health and welfare performance.
7. Private veterinarians and fish health biologists involved in transporting *fish* and the associated handling procedures should have specialist training in such matters.

**Comment:** The United States recommends revising the sentence above to read: *‘Private veterinarians and fish health biologists involved in handling fish in association with their transport should have specialized training as part of their qualifications’*

Article 3

Competence

1. All persons handling *fish*, or who are otherwise responsible for *fish* during transport, should be competent according to their responsibilities listed in Articles 1 and 4.

United States Comments

Competence may be gained through formal training and/or practical experience.  
Competence in areas other than *fish* welfare would need to be addressed separately.

2. Any necessary training should address:
  - a) fish behaviour, physiology, general signs of disease and indicators of poor fish welfare;
  - b) transport regulations;
  - c) operation and maintenance of equipment relevant to fish health and welfare;
  - d) water quality;
  - e) methods of fish handling during transport and associated activities such as loading and unloading;
  - f) methods of inspecting animals, managing situations frequently encountered during transport such as adverse weather conditions, and dealing with emergencies;
  - g) species-specific aspects of fish handling and care, whenever necessary;
  - h) appropriate record keeping.

Article 4

**Planning the [transport](#)**

1. General considerations
  - a) Adequate planning is a key factor affecting the welfare of *fish* during a [transport](#). Before the [transport](#) starts, plans should be made in relation to:
    - i) type of *boat* required;
    - ii) route, taking into account distance, expected weather and sea conditions;
    - iii) nature and duration of the [transport](#);
    - iv) care of the *fish* during the [transport](#);
    - v) emergency response procedures.
  - b) Extreme weather conditions are hazards for *fish* undergoing transport and require appropriate *boat* design to minimise risks. In some extreme conditions, *fish* should not be transported at all.
  - c) As *fish* transport is often a significant factor in the spread of infectious diseases, [transport](#) planning should take the following into account:
    - i) anti-microbials should not be used prophylactically; if used therapeutically,

United States Comments

treatment should only be carried out upon instruction by a veterinarian or fish health biologist;

**Comment:** The United States recommends revising the sentence above to read: *'anti-microbials should not be used prophylactically; if used therapeutically, treatment should only be carried out upon instruction by a veterinarian or duly qualified and/or licensed fish health biologist;*

- ii) before transport is carried out, the necessary biosecurity level should be assessed (e.g. washing and disinfection practices, safe places for changing water, treatment of transport water).

2. Contingency plans

There should be a contingency plan that identifies the important adverse events that may be encountered during the transport, the procedures for managing each event and the action to be taken in an emergency. For each important event, the plan should document the actions to be undertaken and the responsibilities of all parties involved, including communications and record keeping.

3. Boat design and maintenance

- a) *Boats* used for transport of *fish* should be designed, constructed and fitted as appropriate to the species, size and weight of the *fish* to be transported. Special attention should be paid to the avoidance of injury to *fish* through the use of secure smooth fittings free from sharp protrusions.

**Comment:** The United States recommends revising the last part of the sentence above to read: *'.....special attention should be paid to the avoidance of mechanical injury to fish.'*

- b) In order to minimise the likelihood of the spread of pathogenic agents during a transport, *boats* should be designed to allow the secure handling of dead *fish*, and thorough cleaning and disinfection prior to and after the journey.
- c) *Boats* should be maintained in good mechanical and structural condition.
- d) *Boats* should have adequate circulation of water and equipment for oxygenation to meet variations in the conditions during the journey.
- e) The *fish* should be able to be inspected en route to ensure that *fish* welfare standards are fulfilled.

United States Comments

**Comment:** The United States recommends revising the sentence above to read: *'The fish should be inspected en route to ensure that fish welfare considerations are assessed and appropriately addressed.'*

- f) Containers carried on *boats* should be adequately secured.
- g) The maximum number of *fish* to be transported in a container should be determined before the *vehicle* is loaded and the biomass should be able to be measured during the loading process.

**Comment:** The United States recommends revising the sentence above to read: *'The maximum number of fish to be transported in a container should be determined in conjunction with any applicable stocking density recommendations of Appendix XXX and/or the Competent Authority, and before the boat is loaded ; the biomass should be measured during the loading process.'*

- h) Documentation carried with the *boat* should include:
  - i) maintenance programme;
  - ii) transport logbook;
  - iii) check-list for completed cleaning and disinfection;
  - iv) licence from the *Competent Authority*;
  - v) drawings (plan) of the container and pipe system of the transport unit.
- i) The transport unit should be of a type approved by the *Competent Authority* which should give consideration to the above factors.

4. Water and equipment on boat and/or container

- a) Equipment to keep water circulation, water quality (e.g. oxygen, pH, temperature), and monitoring of water quality should be available.
- b) Adequate water circulation and extra oxygenation which can be adjusted to meet variations in temperature during the transport to fulfil the needs of the *fish* species being transported should be available.
- c) The water used should not come from locations under restriction by the *Competent Authority*. The water should be oxygen saturated.

United States Comments

5. Documentation

- a) *Fish* should not be loaded until the required documentation is complete.
- b) The documentation accompanying the consignment (the [transport](#) log) should include:
  - i) [transport](#) travel plan including a contingency plan for emergencies and actions to be taken during the transport;
  - ii) date, time, and place of loading;
  - iii) *fish* species transported;
  - iv) information on biomass load, route, water quality and exchanges, and morbidity/mortality;
  - v) expected time, date and place of arrival and unloading;
  - vii) information to allow traceback to the premises of origin;
  - viii) *stocking density* estimate for containers/compartments in the consignment.
- c) The transport log should be made available to the dispatcher and the receiver of the consignment as well as to *Competent Authority* upon request. Transport logs from previous transports should be kept for a considerable time after completion.

**Comment:** The United States recommends revising the last part of the above sentence to read: ‘...*should be kept after completion of the transport for a period of time as specified by the Competent Authority.*’

- d) When health certification is required to accompany consignments of *fish*, it should include:
  - i) appropriate information on the origin of the *fish*;
  - ii) health status including test, treatment and vaccination status.

6. Preparation of fish for the [transport](#)

- a) *Fish* found unfit for transport by inspection by the *aquatic animal technician*, captain or fish health biologist/veterinarian should not be loaded onto a *boat*.
- b) A group of *fish* that is unfit to [be transported](#) includes:
  - i) a group undergoing a disease event which would be exacerbated by handling or



United States Comments

transport;

- ii) a group with recent exposure to stressors or pathogenic agents.

7. Species-specific recommendations

Transport procedures should be able to take account of variations in the behaviour and needs of the *fish* species. Handling procedures that are successful with one species are often ineffective or dangerous with another.

Recommendations for specific species are described in detail in Appendices XXX. Some species may need to be physiologically prepared prior to entering a new environment; this may include food deprivation or osmo-regulatory capacity.

8. Nature and duration of the journey

The pre-transport preparation, the duration and route of a transport should be determined by:

- a) the purpose of the transport e.g. biosecurity issues, transport of juvenile *fish*, fish for slaughter and killing for disease control purposes;
- b) the ability of the *fish* to cope with the stress of *transport*;
- c) the previous handling and transport experience of the *fish*;
- d) intrinsic factors such as *stocking density*, species and life-stage being transported, metabolic rate of the *fish*;
- e) the quality of water and the availability of water exchange facilities;
- f) other extrinsic factors such as environmental conditions (e.g. air and water temperature), *vessel* and equipment design, road and weather conditions as well as *boat* transport quality.

Article 5

**Loading the fish**

- 1. Since loading has been shown to be the procedure most likely to be the cause of poor welfare in transported *fish*, the issues which should be addressed to avoid unnecessary stress and injury to the *fish* include:
  - a) crowding;

United States Comments

- b) improperly constructed or operated nets;
  - c) improperly constructed or operated pumps, pipes and fittings;
  - d) water quality.
2. The density of *fish* in a container or compartment should not exceed the maximum load (kg/m<sup>2</sup> and/or kg/m<sup>3</sup>) for a given species and a given situation. Recommendations for specific species are described in detail in Appendix XXX. During loading, techniques should be used to measure and record the biomass.
3. Loading should be carried out by *aquatic animal technicians* with knowledge and experience of the behavioural and characteristics of the *fish* species being loaded.

Article 6

Transport

1. General considerations

- a) The captain should ensure that the load is checked immediately before departure to ensure that the *fish* have been properly loaded. Each load should be checked again early in the transport.
- b) Periodic inspections should take place during the transport to maintain acceptable welfare conditions. *Fish* found moribund or dead should be removed from contact with other *fish* and kept under biosecure conditions.
- c) The captain should ensure that water quality is monitored as appropriate as possible and the necessary adjustments made to avoid extreme conditions regarding water temperature, oxygen levels, CO<sub>2</sub> levels, pH changes and ammonia nitrogen.
- d) The captain should try to minimise the effect of adverse environmental conditions which may affect the welfare of the *fish*.

2. Emergency procedures

- a) In the event of a *fish* health emergency on board, the captain should contact the relevant *Competent Authority* to determine the correct procedure to follow.
- b) If the killing of *fish* is necessary during the transport, the captain should ensure that the killing is carried out in accordance with the guidelines for the Humane Killing of Farmed Fish for Disease Control Purposes, and their disposal in compliance with relevant animal health and environmental legislation.

[Note: In general, references here and in other places in the document to the *Guidelines for the Humane Killing of Farmed Fish for Disease Control Purposes* should be standardized and capitalized accordingly.]

United States Comments

**Comment:** The United States recommends adding a sentence to the above section, as follows: '*If fish health or welfare is irrevocably compromised in an emergency during boat transport, such killing should be done as feasibly as is possible with the available personnel.*'

- c) *Aquatic animal technicians* at the place of unloading should be notified of increased mortality during the journey to enable appropriate arrangements to be made in accordance with the contingency plan.

Article 7

**Unloading the fish**

1. The principles of good *fish* handling during loading apply equally during unloading.
2. Some species of *fish* should be acclimatised if there is a likelihood of the *fish* being unloaded into water of a significantly different temperature.
3. *Fish* should be unloaded from the *vehicle* into appropriate compartments as soon as possible after arrival at the destination, but sufficient time should be allowed for unloading to ensure that the unloading proceeds smoothly and does not cause harm to the *fish*.

**Comment:** 'Vehicle' should be changed to 'boat' in the sentence above.

4. Unloading should be supervised by *aquatic animal technicians* with knowledge and experience of the behavioural and physical characteristics of the species being unloaded, and of the equipment being used.
5. Moribund or injured *fish* or *fish* otherwise disabled during a [transport](#) should be sorted out and disposed in accordance with the guidelines for the [Humane Killing of Farmed Fish for Disease Control Purposes](#).

Article 8

**Post-[transport](#) activities**

1. General considerations
  - a) As the health of the *fish* may be compromised as a result of transport and/or change of environment, the *aquatic animal technician* receiving the *fish* should closely observe them during the post-[transport](#) period, and keep appropriate records.

## AAHC March 2006 Report

### United States Comments

- b) *Fish* which show clinical signs following the [transport](#) should be examined by *aquatic animal technicians* and as appropriate treated, isolated or killed in accordance with the [Guidelines for the Humane Killing of Farmed Fish for Disease Control Purposes](#).
- c) Significant problems arising during a [transport](#) should be evaluated and corrective actions taken if necessary.

#### 2. Cleaning and disinfection

If the next [transport](#) involved a new pickup or delivery point, or a different type of load, *boats*, containers and other equipment used to transport *fish* should be cleaned and disinfected before re-use, in accordance with Appendix 5.2.1 of the *Aquatic Code*.

#### Article 9

#### **Actions in the event of an inability to unload a consignment**

- 1. The welfare of the *fish* should be the first consideration in the event of an inability to unload a consignment.

**Comment:** The United States recommends revising the sentence above to read: *'In the event of a temporary or permanent inability to unload a consignment, the welfare of the fish should be given due consideration as attempts are undertaken to rectify such inability. Fish whose health or welfare may be irrevocably adversely impacted through delay in unloading should be humanely killed in as efficient a manner as may be feasible, consistent with other Guidelines that may be established to that effect.'*

- 2. In the case of an international [transport](#), the OIE dispute settlement mechanism should be followed to identify a mutually agreed solution which will address animal health and any other welfare issues in a timely manner.